APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,323	03/29/2004	Ahmad R. Ansari	NEC0217C2US	2725

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EXAMINER
ELLIS, RICHARD L

ART UNIT	PAPER NUMBER
2183	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/812,323	ANSARI, AHMAD R.
	Examiner	Art Unit	
	Richard Ellis	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 November 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>28-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>28-41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

1.   Claims 28-41 remain for examination.

2.   The text of those sections of Title 35, US Code not included in this action can be found in a prior Office Action.

3.   The following in a quotation of the first paragraph of 35 USC 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 28-41 are rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a lack of written description rejection.

5.   Claims 28-32, as presently amended, now state that the plurality of data elements are stored in non-contiguous locations in memory and that the data (which is non-contiguous as amended) is transferred two or more data elements at a time via the bus. Applicant's specification fails to detail this claimed invention with sufficient clarity to allow one skilled in the relevant art that the inventors had possession of the now claimed invention at the time the application was filed. The term "contiguous" (and variants such as discontiguous and contiguously) appears in the specification a total of eight (8) times. The potion of the specification which most closely relates to the invention now claimed in the amended claims is pg. 26 line 8 to pg. 27 line 10. The first sentence located at pg. 26 lines 8-11 deals with the situation of contiguous locations in memory and therefore provides no written description support for a claim reciting non-contiguous memory locations. The second sentence at pg. 26 lines 11-14 deals with non-contiguous memory locations, however what this sentence tells the reader is that if non-contiguous data is accessed, memory bus utilization is suboptimal. This sentence fails to inform a reader that applicants had possession, at the time of filing, an invention which allowed reading two or more data elements at a time from non-contiguous memory locations as is now claimed. The next paragraph, pg. 26 lines 15-24, most closely represents the now claimed invention in that it informs a reader that for non-contiguous cases,

it is "**possible** that memory controller 222 can pack two or more data elements into a larger block which would use memory bus 224 more efficiently" (emphasis added). This sentence informs a reader that it is **possible** to perform that which is now claimed, but provides no information to a reader detailing what invention applicants were in possession of at the time of filing which could perform this operation of "pack[ing] two or more data elements into a larger block". This sentence merely informs a reader that it is **possible** to do such packing. The next sentence, at pg. 26 lines 17-20, refer to figs. 6a and 6b and states that the figures show that it is **possible** to retrieve four values (fig. 6a, 602, 604, 606, 608) using four transfers (610, 612, 614, 616), or that is it **possible** to retrieve four values (fig. 6b, 602, 604, 606, 608) using two transfers (618, 620) when two values are packed together into a single transfer. Again, this sentence and figs. 6a and 6b show that, yes, it is **possible** to transfer four values using two transfers of two values each. What the sentence and figures fail to show is what invention applicants were in possession of, at the time of filing, that could accomplish this packing of two values together into a single transfer. What is missing from fig. 6b and the specification is any disclosure detailing how the invention takes two separated values (fig. 6b 602, 604) and retrieves them as a single transfer (618). The missing material is what aspect of applicant's invention would cause the two lines connecting items 602 and 604 on fig. 6b to element 622 on 6b to retrieve in one transfer both value 602 and value 604, from separated memory locations, as a single combined transfer (618). The remaining disclosure, pg. 26 line 20 to pg. 27 line 10 simply indicate to a reader that not all data packing ratios can be utilized with all data widths, i.e., that some data packing ratio/width combinations can not be packed into a single transfer. This informs a reader of which ratios can be packed, and which ratios can not be packed, but fails to inform a reader of what aspect within applicant's invention performs this packing operation, nor of how this aspect operates to perform this packing operation.

An applicant satisfies the written description requirement by describing the invention:

"One shows that one is "in possession" of the invention by describing the invention, with all of its claimed limitations, not that which makes it obvious." *Jepson v. Coleman,* 50 CCPA 1051, 314 F.2d 533, 536, 136 USPQ 647, 649-50, (1963).

In the present application, applicants have failed to "descri[be] the invention, with all of its claimed limitations" because applicants have done nothing more than indicate to a reader of their specification that it is possible to pack non-contiguous memory data elements into combined memory bus transfers, but have provided exactly zero illumination as to how applicants achieved that particular engineering result. Therefore, the specification fails to provide an adequate written description of the now claimed invention.

6.   As to claims 33-41, although they do not contain the explicit limitation of claims 28-32 of transferring the data items "two or more" at a time, the claims do contain the limitation of "determining a quantity of data elements to be transferred in parallel". In order to "transfer in parallel" a "quantity of data elements" it is inherently required that two or more data elements be transferred at the same time. Accordingly, claims 33-41 contain the same limitation of "two or more at a time" worded in a different wording. Accordingly, the amendment of claims 33-41 to contain the limitation that the data elements are stored in non-contiguous locations in memory results in the exact same written description problem as with claims 28-32.

7.   Claims 28-41 are rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

8.   As was detailed above in the lack of written description rejection, applicant's specification details that it is possible to perform a transfer of non-contiguous memory locations via a single combined bus transfer. However, applicant's specification has also provided zero details as to how applicants system operates to perform this operation of packing two non-contiguous memory locations into a single combined bus transfer. Looking at fig. 6b one of ordinary skill is told that it is possible to pack two non-contiguous memory elements (602, 604) into a single bus transfer (618). Simply telling one of ordinary skill in the art that it is possible to perform this "packing" operation does nothing to inform a reader as to how to

make and/or use a system that performs this "packing" operation. Because applicant's specification provides zero details as to how they performed this "packing" operation, one of ordinary skill is left with nothing more than undue experimentation in order to re-invent a method of packing two non-contiguous memory locations into a single bus transfer across a bus. The situation provided by applicant's specification is exactly the same as knowing from the theories of nuclear physics that it is possible to split a uranium atom and that such fissure will release energy vs. knowing how to build a successful nuclear reactor to split uranium atoms and extract the released energy in a useful form. Simply knowing that it is possible to do something does not, in and of itself, detail to one of skill how it is they are to do that something. Applicant's specification, to properly meet the enablement requirement, is supposed to detail to one of skill in the art how to perform this operation of retrieving two non-contiguous memory locations from memory simultaneously via a single bus operation. All applicant's specification has stated, however, is simply that it is possible to do this operation, but is silent as to how to perform the operation. Leaving one of ordinary skill with a significant amount of undue experimentation in order to deduce what it was that applicant's themselves may have invented. Accordingly, applicant's specification fails to provide an enabling disclosure for the claims as they are now presently claimed.

9.   As to claims 33-41, although they do not contain the explicit limitation of claims 28-32 of transferring the data items "two or more" at a time, the claims do contain the limitation of "determining a quantity of data elements to be transferred in parallel". In order to "transfer in **parallel**" a "quantity of data elements" it is inherently required that two or more data elements be transferred at the same time. Accordingly, claims 33-41 contain the same limitation of "two or more at a time" worded in a different wording. Accordingly, the amendment of claims 33-41 to contain the limitation that the data elements are stored in non-contiguous locations in memory results in the exact same lack of enablement problem as with claims 28-32.

10.   Applicant's arguments with respect to claims 28-41 have been considered but are

deemed to be moot in view of the new grounds of rejection.

11.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

5,131,083   Crawford et al.   This reference relates to a system for reading data from

memory into a processor in a non-contiguous manner.

6,065,070   Johnson

6,330,623   Wu et al.

The above two references relate to systems which transfer non-contiguous blocks of data

to/from memory using a scatter/gather algorithm and with optimal handling of data blocks that

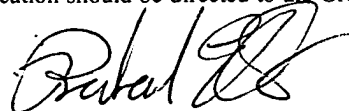do not start/end on a memory word boundary.

12.   Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS**

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension

of time policy as set forth in 37 CFR § 1.136(a).

        A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL
ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION.
IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE
MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT
MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED
STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE
ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE
PURSUANT TO 37 CFR § 1.136(a) WILL BE CALCULATED FROM THE MAILING
DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD
FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS
FINAL ACTION.

13.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to
Richard Ellis whose telephone number is (571) 272-4165. The Examiner can normally be reached on Monday through
Thursday from 7am to 5pm.

        If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be
reached on (571) 272-4162. The fax phone number for the USPTO is: (703)872-9306.

        Any inquiry of a general nature or relating to the status of this application should be directed to the Group
receptionist whose telephone number is (571) 272-2100.

RICHARD L. ELLIS
PRIMARY EXAMINER

Richard Ellis
January 16, 2008